

Scientific American.

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Education in New York City.

We have before us the recently printed report (being the 13th) for 1854 of the Board of Education. From it we learn that there are 262 schools within the jurisdiction of the Board, with an average attendance, exclusive of the evening, normal schools, and Free Academy, of 45,390 pupils; the total, including these schools, being 51,567, or about 197 to each school. There are 146,450 pupils' names on the report, or two-thirds more than the average attendance, a statement which greatly surprises us. The amount of money expended for the purposes of education during the year, amounted to \$776,973, averaging more than fifteen dollars for each of the 51,567 scholars. The *United States Gazette*, Philadelphia, claims for that city a larger number of pupils (52,073,) with as complete a system of education, for only \$456,719, or \$8.79 for each pupil—only a little over one-half that of New York. This shows that the New York Board of Education is behind Philadelphia in economical management.

There can be no doubt but New York pays very liberally for the education of her children, and we might reasonably expect the young and rising generation to be the most soundly educated in the world. We have no such hopes, however, and no such expectations because it appears to us that the system of teaching is wrong. The Board of Education, with perhaps a laudable ambition to teach the young a little of everything, have adopted a system which ends by teaching them nothing. The pupils of New York are furnished with such an abundance of books, that their tendency is to confuse, not educate. There is an effort made to cram a monstrous diversity of knowledge into the minds of the children, which results in cramming out what was learned yesterday, by what has to be crammed in to-day. Thus a girl of ten years of age has as many books to study as would load a pack horse. She studies arithmetic, history, grammar, astronomy, natural history, philosophy, mineralogy, geology, chemistry, and physiology—ten different studies. And the Board speaks in flaunting terms of this system; why, it is a plaster on common sense. We have witnessed with much pain the efforts of children in committing long lessons in geography, physiology, chemistry, history, &c., to memory, all of which were forgotten in a few days, because it was mentally impossible to retain them. Cut down the studies of such from ten to four books, and we will have more soundly educated children. They will not grow up as they are now doing—superficial in everything.

Enforcing the New Steamboat Law.

We have before us two reports of the Inspectors under the New Steamboat Law,—the one from the District of St. Louis, the other from that of New York. The Report of the Inspectors of St. Louis, Mo., James H. McCord and H. Singleton, relates to the collapsing of both flues of the middle boiler of the steamer *Reindeer* on the 7th April, 12 miles above St. Louis. By this accident three firemen were so severely scalded that two of them have since died. The Inspectors exonerate the engineer, the captain, and all the officers, of blame, and assert that the accident was caused by defective flues. These had been examined by the Inspectors of the Louisville District, in 1854, and a certificate given that they were one quarter of an inch in thickness, whereas, they were found to be a little less than three-sixteenths of an inch. As the boiler had been afterwards examined by the St. Louis Inspectors, we think that those of Louisville will assert that when they gave their certificate, (8th April, 1854,) the flues were of the thickness represented on the certificate, and they may throw the blame on the St. Louis Inspectors.

The boilers of the *Reindeer* were five in number, 30 feet long and 40 inches in diame-

ter, with two return flues, 15½ inches in diameter. Messrs. McCord and Singleton have condemned the whole of them as being dangerous, and have ordered new and improved ones to be substituted. They condemn the 15½ inch flues as dangerous in boilers of such a diameter, and have certainly in this case ordered a sure remedy.

The other Report, that of John M. Weeks and Henry B. Renwick, Local Inspectors of this port, relates to the limited suspension of the license of John I. Low, fifth class engineer, for negligence in permitting the water in the boiler of the steamboat *Splendid* to fall below the water line on two occasions. Charges were preferred against the engineer for neglect, and this is the result. The suspension took place on the 1st inst., and will continue four months. On none of these occasions did the water fall lower than three inches above the flues, but negligence was shown, and our Inspectors know that they cannot allow the law to be trifled with. It gives us great pleasure to know that we have so many faithful men to enforce the New Steamboat Law.

It would have afforded us sincere satisfaction had our Legislature passed a law during its last session, providing for Inspectors of all steam boilers, stationary and locomotive, in the State. Every State in our country should have such an Inspection. It would be the means of preventing many sad catastrophes. Two weeks ago, a boiler in Geer's foundry, Troy, N. Y., weighing 6 500 lbs., exploded, passing up through the roof, to a height of 75 feet, smashing everything in its way, and landed more than a hundred feet from where it started. Sixty men and boys were employed in the foundry at the time, and by good fortune only two were injured—none killed. The explosion was no doubt caused by an over-pressure of steam; the wonder is that so few were hurt.

The Boston Steam Fire Engine.

A fire took place in Boston on the 29th ult., by which \$1,000,090 worth of property was consumed, including two fire engines; yet we have been informed that it never was attempted to bring the steam fire engine into operation. This engine, "Miles Greenwood," for which the city of Boston recently paid \$12,000, was suffered to stand idle during the fire, although it might have done a great deal to stop the conflagration. What is the matter with this Engine? Let us know the whole truth about it. It operated well on the trial in this city, and impressed many very favorably with its powers and utility.

The City of Boston, at one time purchased a number of "Fire Annihilators," one of which exploded prematurely when being carried to a fire, and thus sealed the fate of the others; they were sent to repose in a cellar, or some such place, and never attempted to be used. We are anxious to know something about the "Steam Fire Engine," because we have always taken an interest in fire engine matters, and heartily wish success to the working of such machines by steam, instead of severe manual labor, respecting which we know considerable from personal experience.

Navigation of the Hudson River.

It seems that Professor Renwick has been writing a series of articles to the *Albany Evening Journal* on the navigation of the Hudson River, in which he takes the ground that the driving of piles and the formation of docks at New York affects the depth of the channel and the velocity of the water as far up as Troy. The *Albany Knickerbocker*, in answer to this, says, "The Professor runs away with the idea that our water is growing less and less annually. This is not so. In front of this city, the water is as deep now and runs with as much velocity as it did fifty years ago. Opposite the pier, the water is sufficiently deep to accommodate half the ships that enter the port of New York. It is not a short supply of water which injures the navigation, but an over supply of sand bars. These bars are caused, not by driving fishpoles in the river opposite Hoboken, but by the neglect of the government and the washing away of the Greenbush bank. The

bars which formerly bothered us, have entirely disappeared. Among those which annoy us now are several just below the village of Greenbush, and one in the vicinity of "Nine Mile Tree." The former could be overcome by an outlay of ten thousand dollars, the latter by two months of common sense digging."

[The editor of the *Knickerbocker* is right, excepting in attributing all the blame of the obstructions to navigation near Albany, to government neglect. If the government has failed to do its duty—has been neglectful, the people of Albany have not exhibited good common sense in waiting and begging government for assistance. It would soon pay them with compound interest, to adopt means for the protection of the Greenbush bank. True, they have done something in this way, but how clumsy, and how inefficient. They should build a strong wall of groined arches along the whole Greenbush bank below the lower Ferry, and keep delving into the sand and mud banks continually. There can be no doubt but there is enough water in the driest seasons, in the Hudson at Albany, to float a seventy-four gun ship. No canal is wanted, as has been proposed, to make the ports of Albany and Troy navigable for vessels of a thousand tons burden. The chief engineers of the cities of Troy and Albany should be men of civil and mechanical qualifications, to engineer any work; and the condition of the Hudson in their respective districts, should be under their charge. If these two cities were to act upon this advice, we are confident it would tend greatly to their prosperity.

Presentation of a Plow.

We learn by the *Vincennes, Ind., Practical Farmer*, that a handsome plow was recently presented to the Hon. H. L. Ellsworth, ex-Commissioner of Patents, by T. E. Brinley, of Kentucky. From the speeches made on the occasion, we learn that this plow is quite a Don among the plows, having taken no less than thirty nine premiums.

Mr. Ellsworth in reply to W. Stringfield, who presented the plow, did not use any high-flown words on the occasion, but said it was a beautiful plow, and would afford him great pleasure to test it with a dynamometer, in order to determine its draught. The plow is made of steel, and has a polished mold-board, as cast and wrought-iron mold-boards are not suitable for plowing the soil of the Wabash Valley. It seems that Mr. Ellsworth has dispensed with the plowman so far as it relates to holding the stils. He said, "for years no one has held my plow, or dropped the corn. My plow beam obtains its steadiness by being attached to an axle, or two mole wheels; and a wheel of 18 inches diameter, made of 1½ inch board, having an artificial finger fastened at one side, that dips into a measure of corn at each revolution, deposits the seed, which is covered by the next furrow."

When he was in the Patent Office (he stated) he always advocated an Agricultural Department to protect and foster this important branch of national industry, "but politicians courted the farmers' votes during canvass, then forgot their promises as soon as they reached Washington." We agree with Mr. Ellsworth in this. There should be an Agricultural Department in Washington, and it should be sustained and supported liberally by our General Government, but our inventors should not be taxed to support it.

Consuming Smoke.

It would appear from a statement in the *London Illustrated News* that the new law in England to compel the consuming of smoke in furnaces, operates injuriously to the interests of many. The proprietors of the *News* state that the injection of jets of cold air above the coal, in their furnaces, involves a loss of 15 per cent, instead of being a saving, as had been predicted. They had tried a number of furnaces, all of which had failed to give satisfaction. We know that it is a mistaken notion, entertained by many, that very long boilers, and long tortuous flues save fuel, and it appears to us that the mixing of cold air with the hot gases, in order to

produce perfect combustion, is just as incorrect a notion. It cannot be denied, however, that all the fuel which passes off in a state of smoke is positive loss. "Can this be consumed to advantage?" is the grand question. We believe it can, but the air for mixing with it, should always be highly heated before hand. If the proprietors of the *Illustrated London News* would adopt means to heat the air before mixing it with the smoke of their furnaces, we have no doubt that, instead of a loss of 15 per cent. over the old methods, they will effect a saving equal to that amount.

Splendid Engines for the Cleveland Water Works.

On Thursday afternoon we experienced the pleasure of witnessing and examining the two new steam engines, pumps, boilers, &c., designed, and built by the Allaire Works, this city, for the City Water Works of Cleveland, Ohio. The engines—two in number—have cylinders 70 inches in diameter, and 10 feet stroke, with pumps 30 inches in diameter, and 8½ feet stroke. They are constructed on the Cornish plan, this being allowed to be the most economical for pumping engines in the world. They have received a very high finish, and taking them for all in all, we believe they are the best finished engines we have seen in our country. Each engine is a perfect duplicate of the other, in every part, to the smallest curve and the minutest line. The beams are huge masses of metal, each weighing about 30 tons. They do great credit to New York engineers, and especially those engaged in designing and constructing them. The city of Cleveland, in getting such engines, has exhibited a noble and enterprising spirit. They have far distanced the people of Chicago.

These engines are to be placed near the lake, from which they are to draw water and throw it to a considerable distance, into a reservoir, on an elevation of 170 feet, from which it will be led by gravitation across the river, and distributed to the city.

The boilers for these engines are six in number, on the Cornish plan—high pressure. They possess a large amount of heating surface. All the castings are very fine, and the greatest care, and the best of skill have been exercised to produce engines of which New York and Cleveland may well be proud.—The architecture of the machinery, and the drafting of all the details, deserve great praise.

The engine house will be constructed of brick work, with iron cornice window frames and sills, from designs of Mr. Snowden, the engineer of the Water Works.

The Steamship that was the "Ericson."

This ship—with her hot-air engines consigned to the tomb—made her first trial trip with her new steam engines, down the Bay, on Thursday afternoon last week. The *New York Times* says of it, "There was not so great or good time as when she made her hot-air trial trip." The *Tribune* says, "she returned to the city having made a very satisfactory trip."

And thus it is that those gentlemen who two years ago were so enthusiastic and eloquent respecting a project which proved an utter failure, and which sound scientific engineers very well knew would turn out so, have only a few words to say respecting the great invention which was, in their opinion, destined to revolutionize the world and to annihilate steam. Our Lieut. Governor Raymond, and Mr. Dana should certainly have been invited to make speeches on this occasion, in order to make public confession for the erroneous statements they made on their "hot air trip."

The hot-air engines being abandoned, we would think it creditable to those eminent men of science, who spoke so confidently of their success two years ago, to come out now before the public and confess their error.

Another Asteroid.

M. Le Verrier in a letter to Lieut. Maury, dated Paris, April 7th, announces the discovery of another asteroid, being the thirty-fourth of the system of small planets between Mars and Jupiter.